HOLLEY MODEL 6510-C & 6520 2-BARREL

CARBURETOR APPLICATION

CHRYSLER CORP. (MODEL 6520)

Application	Chrysler Corp. Part No. Man. Trans.	Auto. Trans.
1.7L (105") 4-Cylinder		
Nationwide		
Without A/C	R-9822A	R-9824A
With A/C	R-9823A	.....
2.2L (135") 4-Cylinder		
Federal		
Without A/C	R-9503A	R-9505A
With A/C	R-9504A	R-9506A
California		
Without A/C	R-9507A	R-9509A
With A/C	R-9508A	R-9510A
High Altitude		
Without A/C	R-9750A	R-9752A
With A/C	R-9751A	R-9753A

GENERAL MOTORS (MODEL 6510-C) (CHEVROLET & PONTIAC)

Application	General Motors Part No. Man. Trans.	Auto. Trans.
1.6L (98") 4-Cylinder		
Federal		
Without A/C	.....	14032367
With A/C	14032364	14032365
California		
Without A/C	14032366①	14032371
With A/C	14032368	14032369
High Altitude		
Without A/C	14032366	.....
With A/C	.....	.....

① — 5-Speed; 4-Speed — 14032370.

CARBURETOR IDENTIFICATION

Carburetor part number or identification number may be found stamped on the fuel bowl assembly or on a metal tag attached to carburetor.

DESCRIPTION

The Holley 6510-C and 6520 carburetors are "staged" dual venturi electronic feedback carburetors. The primary bore is smaller than the secondary bore. The primary side of both carburetors contains float system, idle system, main metering system, pump system and choke system. The secondary side contains main metering system and power system. Fuel for both primary and secondaries is provided by a common fuel supply.

The float system maintains a preset fuel level in bowl. Float bowls on both carburetors are internally and externally vented. Internal vents in the air horn balance air pressure on fuel in bowl with carburetor inlet air. External venting by means of an electronically controlled vacuum diaphragm allows fuel vapors to be stored in the canister when ignition is off. The idle system provides an accurate air/fuel mixture during curb idle and low speed operation. The idle mixture screw is factory sealed.

Main metering system is incorporated within carburetor primary and secondary. The primary main metering system provides air/fuel mixture for normal engine operation. The air/fuel mixture is controlled by a mixture control solenoid (General Motors) or duty cycle solenoid (Chrysler Corp.). The control solenoids are electronically actuated by the Spark Control Computer (Chrysler Corp.) or Electronic Control Module (General Motors) to maintain the air/fuel ratio close to 14.7:1 during normal engine operation. When the solenoid is energized, the plunger moves downward and decreases fuel flow through the main metering system. At the same time, an air bleed is opened to further lean out the mixture. When the solenoid is de-energized, fuel flow is increased and the mixture becomes richer.

The secondary main metering circuit provides more fuel for full power operation. As the primary throttle valves approach wide open throttle, the primary throttle lever contacts the secondary throttle lever link to rapidly open secondary throttle valve. In this manner, increased air flow through secondary draws additional fuel from common fuel supply through a calibrated air bleed.

Both carburetors are equipped with diaphragm-type accelerator pumps to provide additional fuel for sudden acceleration. Both carburetors are equipped with electric chokes to assist cold engine starts. On General Motors' models, a throttle position sensor (TPS) informs the ECM of throttle position and an idle speed control (ISC) actuator increases idle speed when energized by the ECM. On Chrysler Corp. models, a solenoid idle stop (SIS) and carburetor switch inform the computer of throttle position. A wide open throttle/air conditioner cutout switch is also used on Chrysler Corp. models to cancel A/C operation during wide open throttle conditions.

TESTING

ELECTRIC CHOKE

Chrysler Corp. — Remove air cleaner and disconnect Dark Blue wire at choke. Using a jumper wire, connect choke to battery positive terminal (ignition off). Choke valve should fully open within 5 minutes when vehicle is parked inside. Remove wire and install air cleaner.

General Motors — **1)** Remove air cleaner. With engine off, hold throttle valve half open and open and close choke several times. If linkage binds, sticks or operates slowly, clean and service linkages. Ensure vacuum lines are properly connected and perform vacuum break adjustment.

2) If electric choke does not open, check voltage at choke heater connection with engine running. If voltage is 12-15 volts, replace electric choke unit.

3) If voltage is low or 0, check all wires and connections. If connection at oil pressure switch is bad, temperature pressure warning light will be off with ignition on and engine not running. Repair wires and connections as required.

4) If steps **2)** and **3)** are okay, replace oil pressure switch.

ADJUSTMENTS

HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP SERVICE PROCEDURES.

HOLLEY MODEL 6510-C & 6520 2-BARREL (Cont.)

IDLE MIXTURE
See appropriate article in TUNE-UP SERVICE PROCEDURES.

COLD (FAST) IDLE RPM
See appropriate article in TUNE-UP SERVICE PROCEDURES.

MIXTURE CONTROL SOLENOID & DUTY CYCLE SOLENOID
See appropriate article in TUNE-UP SERVICE PROCEDURES.

THROTTLE POSITION SENSOR (TPS)
See appropriate article in TUNE-UP SERVICE PROCEDURES.

FLOAT LEVEL

1) With air horn removed, turn upside down. Allow weight of float to press down against float needle valve. See *Fig. 1*.

2) Measure float level specified clearance between top of float and air horn gasket surface. Clearance can be checked using a specified drill or pin gauge.

3) Make sure float tang still rests on float needle when clearance is checked. To adjust, bend float tang.

NOTE – *Do not apply pressure to float needle while checking or changing adjustment.*

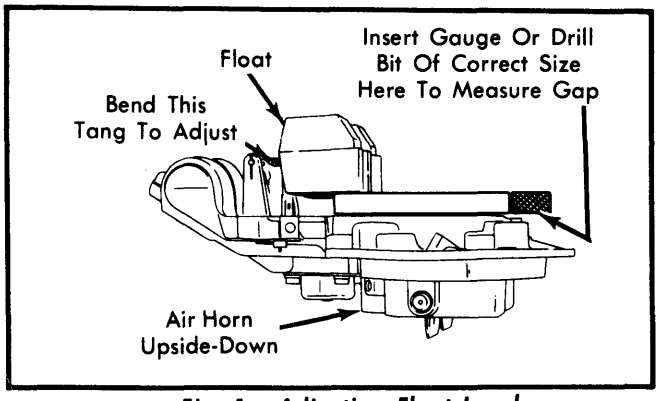

Fig. 1 Adjusting Float Level

FLOAT DROP

Chrysler Corp. Only – Hold air horn right side up. Using a "T" scale, measure float drop distance from air horn gasket surface to lower toe of float. To adjust, bend float tang with small screwdriver. Support float while applying pressure to tang.

CHOKE VACUUM BREAK (INITIAL CHOKE VALVE CLEARANCE)

NOTE – *All models are equipped with tamper-proof screws to retain choke coil cover. File screw heads until cover retaining ring can be removed and then remove remaining portion of screws from choke housing. New screws are provided in service kit.*

1) On Chrysler Corp. models, open throttle, close choke valves, then close throttle. On all models, connect a vacuum source to vacuum break diaphragm and apply enough vacuum (at least 15 in. Hg) to seat diaphragm.

2) On General Motors models, push fast idle cam lever down (clockwise) to close choke valves.

3) On Chrysler models, apply force on top of choke valves to close blades as far as possible and take slack out of linkage (an internal spring will compress). Insert drill or gauge between top of choke valve and bore wall.

4) On General Motors models, take slack out of linkage in the direction of opening the choke. Position drill or gauge between lower edge of choke valve and bore wall.

5) Adjust by rotating hex-head screw in center of diaphragm housing. After adjustment, replace vacuum hose and insert blocking rivet in hex-head screw.

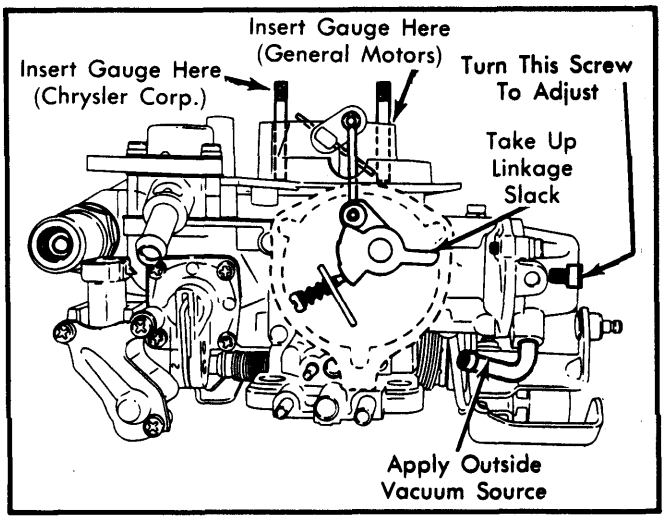

Fig. 2 Adjusting Choke Vacuum Break (Initial Choke Valve Clearance)

FAST IDLE CAM POSITION

General Motors Only – 1) Place fast idle speed screw on 2nd step of fast idle cam. Insert gauge between lower edge of choke valve and inside of air horn wall.

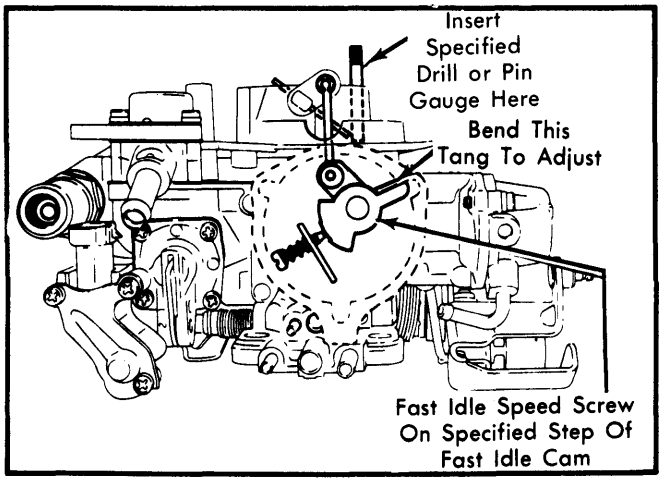

Fig. 3 Adjusting Fast Idle Cam Position

HOLLEY MODEL 6510-C & 6520 2-BARREL (Cont.)

2) With clearance correct, choke lever tang should just contact lever on fast idle cam. To adjust, bend tang. See *Fig. 3.*

CHOKE UNLOADER

General Motors Only – 1) Hold throttle valves wide open. Measure choke unloader specified clearance between lower edge of choke valve and air horn wall. See *Fig. 4.*

2) Clearance can be measured using a specified drill or pin gauge. To adjust, bend choke unloader tang on fast idle cam.

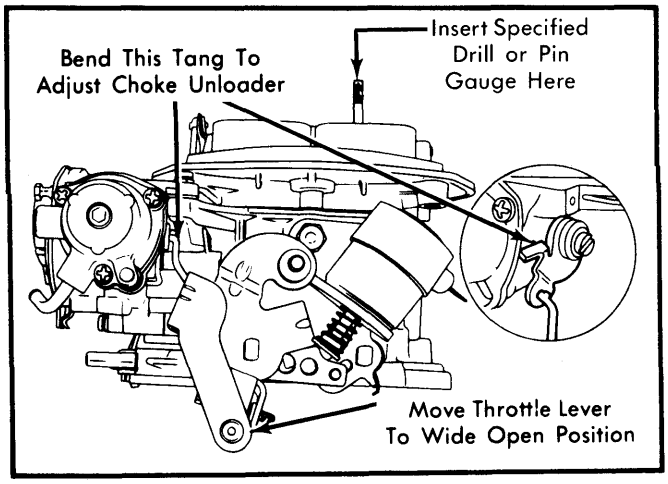

Fig. 4 Adjusting Choke Unloader

AUTOMATIC CHOKE

NOTE – *The choke assembly is installed with a locating tang and cannot be adjusted. Choke assembly removal is not required unless throttle body is to be immersed in carburetor cleaner.*

SECONDARY THROTTLE STOP SCREW

General Motors Only – Back off secondary throttle stop screw until it no longer touches throttle lever. Turn screw in until it just touches secondary throttle lever. Turn screw an additional ¼ turn. See *Fig. 5.*

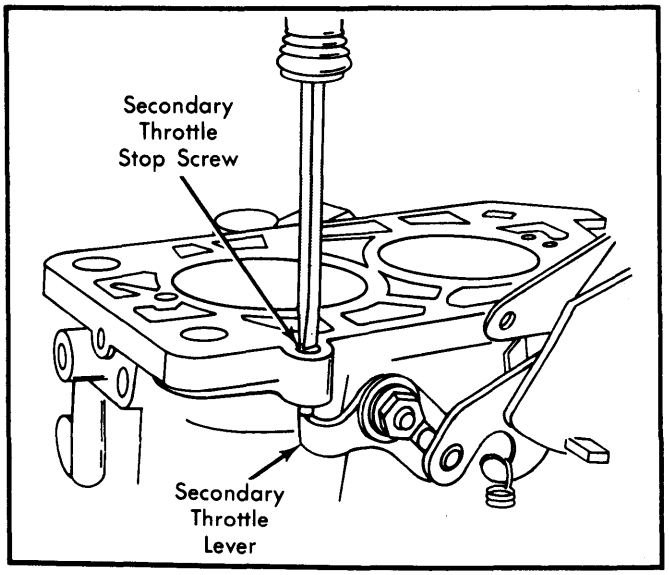

Fig. 5 Adjusting Secondary Throttle Stop Screw

OVERHAUL

DISASSEMBLY

Air Horn – 1) Remove fuel inlet fitting and filter (General Motors models). Disconnect and remove choke operating rod and discard seal. Remove mixture control solenoid by removing 2 mounting screws.

2) On Chrysler Corp. models, remove anti-rattle spring and idle stop solenoid. Scribe location mark on wide-open throttle switch and remove switch. On all models, remove 5 air horn screws and remove air horn.

3) Remove float pin, float and inlet needle. Remove needle seat and gasket from air horn. On General Motors models, remove bowl vent solenoid. On all models, remove and discard bowl vent seal retainer, diaphragm, seal and spring.

Main Body – 1) Remove primary and secondary main metering jets, noting size for correct installation. Also remove primary and secondary high speed bleeds and main well tubes, noting location for reassembly.

2) Remove pump discharge nozzle and gasket. Invert body and catch check ball and spring (General Motors) or 2 check balls (Chrysler Corp.).

3) Remove 4 screws and accelerator pump cover. Remove spring and pump diaphragm. On General Motors models, remove Throttle Position Sensor (TPS) before immersing cover in carburetor cleaner.

4) Use a file or grinder to remove heads on choke cover retaining screws. Remove retaining ring and screws, then remove coil, ground ring, and coil housing.

5) Remove choke housing shaft nut, lock washer, lever, spring retainer and cam from choke housing shaft. Remove screw and lockwasher, then remove bushing, spring washer, fast idle lever, and washer from housing.

6) Remove choke diaphragm cover retaining screws. Remove cover and spring.

7) On General Motors models, invert carburetor body and place punch in locator point beneath mixture needle plug. Drive out plug with punch. Lightly seat screw, counting number of turns required. Remove mixture screw. Remove idle speed solenoid.

8) On Chrysler Corp. models, drill a 1/16" pilot hole in bottom of throttle body at 45° angle toward mixture plug. Redrill hole to ⅛" and drive out mixture screw plug with punch. Insert a sharp punch through mixture screw hole and slide roll pin out. Count turns required to seat needle, then remove needle.

CLEANING & INSPECTION

- Do not immerse plastic or rubber parts in solvent. Do not immerse diaphragm assemblies or solenoid in solvent.
- Blow out all passages with compressed air. Do not use wire or drill bit to clean carburetor orifices.
- Inspect all parts for wear, cracks, nicks or burrs, and damage. Replace parts as necessary.
- After cleaning with solvent, wash all parts in hot water and blow dry with compressed air.

REASSEMBLY

To reassemble carburetor, reverse disassembly procedures. Use new gaskets and seals. Make sure that new gaskets fit correctly and that all holes and slots are punched through and correctly located.

HOLLEY MODEL 6510-C & 6520 2-BARREL (Cont.)

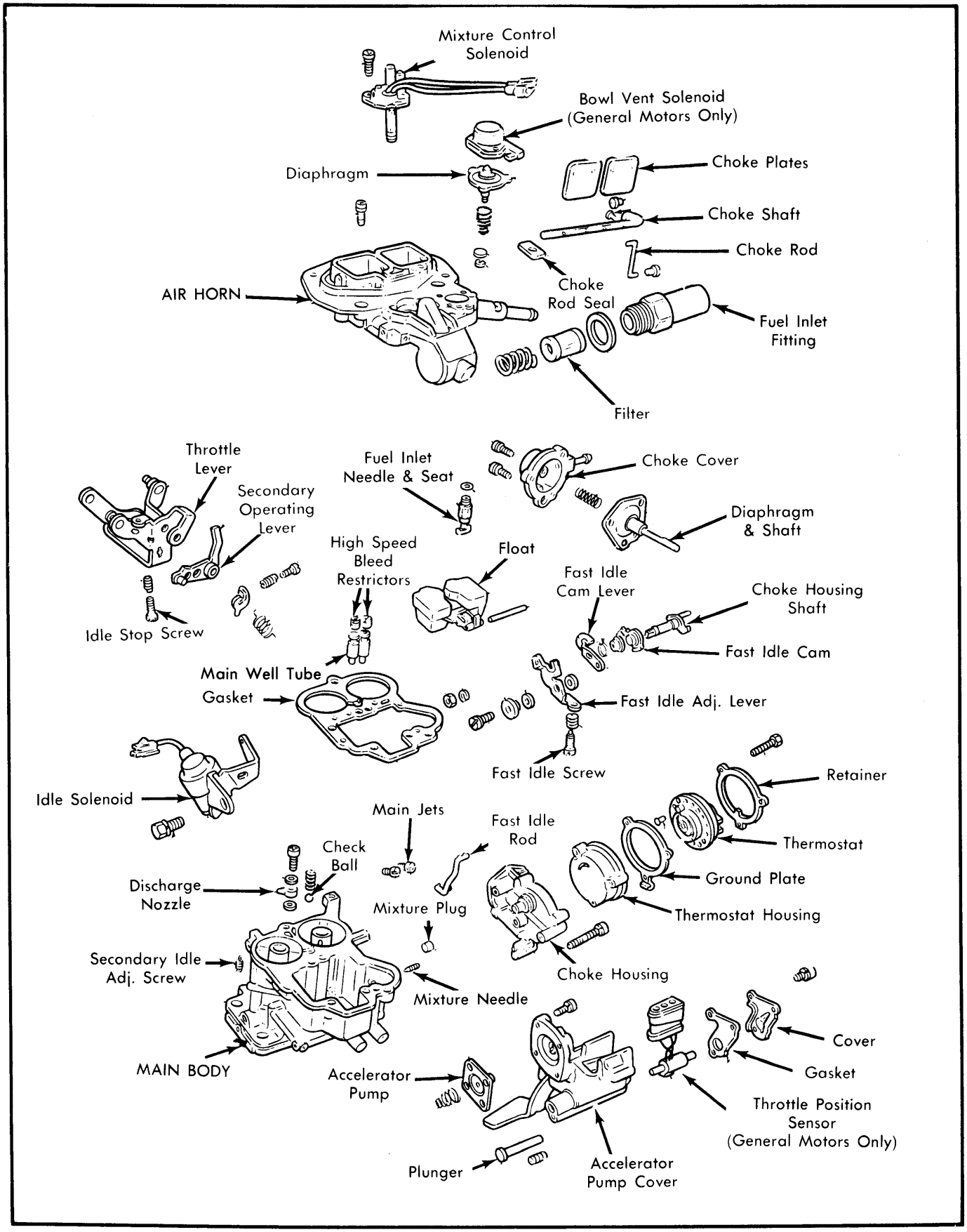

Fig. 6 Exploded View of Holley Model 6510-C 2-Barrel Carburetor

HOLLEY MODEL 6510-C & 6520 2-BARREL (Cont.)

CARBURETOR ADJUSTMENT SPECIFICATIONS

Application	Float Level Setting	Float Drop Setting	Fast Idle Cam Setting	Choke Vacuum Kick Setting	Choke Unloader Setting	Auto. Choke Setting
Chrysler Corp. (6520)						
R-9503A	.480″	1.875″	.....	.050″	.....	①
R-9504A	.480″	1.875″	.....	.050″	.....	①
R-9505A	.480″	1.875″	.....	.060″	.....	①
R-9506A	.480″	1.875″	.....	.060″	.....	①
R-9507A	.480″	1.875″	.....	.085″	.....	①
R-9508A	.480″	1.875″	.....	.085″	.....	①
R-9509A	.480″	1.875″	.....	.085″	.....	①
R-9510A	.480″	1.875″	.....	.085″	.....	①
R-9750A	.480″	1.875″	.....	.050″	.....	①
R-9751A	.480″	1.875″	.....	.050″	.....	①
R-9752A	.480″	1.875″	.....	.060″	.....	①
R-9753A	.480″	1.875″	.....	.060″	.....	①
R-9822A	.480″	1.875″	.....	.047″	.....	①
R-9823A	.480″	1.875″	.....	.047″	.....	①
R-9824A	.480″	1.875″	.....	.040″	.....	①
General Motors (6510-C)						
14032364	.500″	.....	.080″	.270″	.350″	①
14032365	.500″	.....	.080″	.270″	.350″	①
14032366	.500″	.....	.080″	.270″	.350″	①
14032367	.500″	.....	.080″	.270″	.350″	①
14032368	.500″	.....	.080″	.270″	.350″	①
14032369	.500″	.....	.080″	.270″	.350″	①
14032370	.500″	.....	.080″	.270″	.350″	①
14032371	.500″	.....	.080″	.270″	.350″	①

① — No adjustment required.